Device for prevention against explosion of an electrical transformer including an enclosure filled with combustible coolant, and a means for decompressing the enclosure of the transformer. The decompression means includes a rupture element with integrated explosion detector provided with a retention part including first zones which have a reduced thickness in comparison with the rest of the retention part and are capable of tearing without fragmenting when the element ruptures, and second zones which have reduced thickness in comparison with the rest of the retention part and are capable of folding without tearing when the element ruptures. The rupture element is capable of breaking when the pressure inside the enclosure exceeds a predetermined ceiling. The signal from an explosion detector integrated with the rupture disc triggers a cooling system and prevents oxygen from coming into contact with the explosive gases generated by the electric arc in contact with the oil.